

Village of Piketon

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Billy R. Spencer
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January 3, 2018

Robert E. Edwards, III
Manager
Portsmouth/Paducah Project Office
U.S. Department of Energy
Office of Environmental Management
1017 Majestic Drive, Suite 200
Lexington, KY 40513

Craig W. Butler, Director
Ohio Environmental Protection Agency
50 West Town Street
Suite 700
P.O. Box 1049
Columbus, OH 43215

RE: Village of Piketon, OH Position on Area D Proposed Landfill, PORTS Facility

Dear Mr. Edwards and Mr. Butler,

On behalf of the Village Council of Piketon, I want to thank you both for meeting with Piketon officials on December 20, 2017 in which the proposed On-Site Waste Disposal Facility (OSWDF) was the topic of discussion. The meeting was also attended by staff from the Ohio Congressional Delegation, the Pike County Commissioners and Speaker Rosenberger. I also wish to thank Director Butler for seeking outside review from US EPA Region V of the Portsmouth Gaseous Diffusion Plant (PORTS) OSWDF project.

I appreciate and recognize the efforts undertaken by DOE and OH EPA to address the concerns raised by the Village of Piketon through its environmental consultant, The Ferguson Group, on the plan to construct the OSWDF at Area D of the PORTS facility. The report prepared by the US EPA Region V (dated December 19, 2017) discusses the structural integrity of the proposed OSWDF site and the low probability that the Berea Formation at the OSWDF will become contaminated. The US EPA report also touches upon the bedrock fractures that are present at the OSWDF site, and Director Butler makes note of the Ohio Department of Natural Resources support of OH EPA's position. I would like to respond to each of these items in the order presented.

- 1) **Structural Integrity of the OSWDF at PORTS Area D:** Director Butler states in his letter of December 19, 2017 that the underlying bedrock at Area D is strong enough to support the weight of the OSWDF cells. In support of Director Butler's perspective,

the US EPA Region V evaluated the geotechnical data from the OSWDF portion of the RI/FS and concluded that the OSWDF should be able to be constructed on the existing bedrock with the proposed fill capacity without compromising a typical composite liner system, if the fill sequencing and other conditions are carefully considered and rigorously followed during the operation of the landfill.

The Village of Piketon appreciates the efforts undertaken by Director Butler to seek out a third party review from the US EPA Region V on the question of structural integrity at Area D with respect to the OSWDF.

- 2) **Low probability that the Berea Formation will become contaminated:** In Director Butler's letter of December 19, 2017 he states that the Berea Formation will not be contaminated at Area D from the construction and placement of low-level nuclear and hazardous waste at the proposed OSWDF. Included in Director Butler's letter is the following statement made by Michael Harris, Acting Division Director, Land and Chemicals Division, US EPA Region V,

"BAH and EPA also evaluated hydraulic and hydrochemical data for evidence of a hydraulic connection between the Berea and Cuyahoga formation. EPA concluded that there appears to be no evidence that a hydraulic connection exists at the site, but identified limitations in the data that do not make this conclusion definitive."

On page 24 of the December 19, 2017 Director Butler letter to the Mayor of Piketon, the US EPA Region V makes the following assertion regarding the potential for contaminants leaching into surface water and the limitations of the RI/FS investigation of the OSWDF area,

A seep investigation identified 59 seeps located at variable elevations. The seep investigation concluded that seeps are generally found at the interface above the weathered bedrock surface, but in other instances they were identified as groundwater discharging from sandstone lenses or bedding plane partings in the weathered bedrock⁵. The report goes on to say that "in areas where fractures occur or the bedrock (or weathered bedrock) is sandy and more permeable, some of the groundwater moves downward from the regolith to provide recharge to the deeper bedrock system." Based on this evidence, it is not clear to USEPA that contamination escaping the OSDC will not move horizontally in shale bedding planes or one of the sandstone units and re-emerge in surface water through seeps.

Although there is some evidence that a hydraulic connection does not exist at the site, we cannot definitively make this conclusion. The reliance on photographs of cores rather than the actual cores, the time difference in hydraulic head data, inconclusive and incomplete pump tests, and incomplete analysis regarding the significance of the seeps present at the site limit EPA's ability to make this determination. Other lines of evidence, and more time for the review, are needed to determine whether a hydraulic connection does not exist between the Berea sandstone and overlying saturated intervals.

The above captioned portion of the US EPA Region V Report on the DOE investigation undertaken at the OSWDF reflects the agency's concern that the proposed low-level nuclear and hazardous waste landfill could leak radioactive and hazardous chemical contaminants into the surface water media. In addition, the US EPA Region V is also

not willing to conclude that the Berea formation will be protected from the landfill leachate. Further, US EPA describes in detail the Agency's concerns on the scope of investigation undertaken and encourages DOE to undertake a more comprehensive investigation.

- 3) **Bedrock Fractures:** In the December 19, 2017 letter, Director Butler states the following with respect to bedrock fractures,

“we presented in great detail evidence in the form of photographs of the rock cores, rock quality data, and pump tests results which directly counter the claims of the bedrock being “highly fractured” and unsuitable.”

In Director Butler's letter of November 24, 2017 to Senator Portman, he wrote the following statement regarding the bedrock fractures,

“Regarding boring logs, many of the fractures noted by the Village of Piketon were mechanical fractures caused by drilling, and not inherent fractures in the geology. For example, using photographs of soil bore 35 (SB-35), the core is not highly fractured. However, the SB-35 boring log prepared by DOE's consultant (i.e. FBP) indicated many fractures being logged. The duly noted fractures were mechanical breaks with no obvious staining, which are indicative of breaks that occur during the coring process instead of being pre-existing fractures of the formation.”

The Village's consultant, The Ferguson Group, has only relied on DOE's RI/FS data in his analysis of the extent of bedrock fracturing at the OSWDF. He has determined that the entire OSWDF landfill footprint will be constructed on bedrock that is fractured at depths greater than 20 feet of ground surface. While I recognize that OH EPA does not agree with this analysis, surely the Department would agree with the analysis rendered by the US EPA Region V. In the US EPA Region V's analysis of the bedrock fracture the Agency comments specifically on SB-35 as representing natural fractures which directly contradicts Director Butler's analysis. US EPA Region V states the following in the December 19, 2017 correspondence:

“USEPA could not conclusively differentiate from photographs whether a fracture or break was mechanical (i.e. formed during drilling and removal of the rock core; was not present before drilling) or natural (i.e. formed in-situ, existed prior to the investigation, and may be partially mineralized, weathered, or sediment-filled). While the boring logs described natural fractures as being calcite-filled (e.g. SB-24, 135' depth) or clay-coated (SB-35, 36.64' depth) or exhibiting other kinds of mineralization or sediment coating, the rock cores were not archived after the investigation for evaluation, and these features could not be discerned from photographs. Therefore, making deductions on the formation of fracture features with certainty was not possible.”

Based upon US EPA Region V's assessment of the fracturing present at the OSWDF, the Village of Piketon remains concerned that DOE with OH EPA's support for constructing a low-level nuclear and hazardous waste landfill at a site that is documented to be fractured in essentially 100% of the site area and at depths greater than 20 feet of ground surface. This is the public record for the Area D OSWDF as presented in Boring logs in Appendix B of the RI/FS report, and the US EPA Region V is not contradicting this fact.

- 4) **Comments from the Ohio Department of Natural Resources regarding the adequacy of placing the OSWDF at Area D:** Director Butler includes in his letter that the Department sought out review of the OSWDF investigation from the Ohio Department of Natural Resources (DNR), Geologic Survey. He states that DNR supports OH EPA's conclusions, however, there are two outlying concerns I wish to note:
- a) A letter has not been transmitted to the Village of Piketon on the Ohio DNR position on the OSWDF, and
 - b) The OH DNR website contradicts the representation made by Director Butler with respect to landfill siting of the OSWDF. The following URL site, <http://geosurvey.ohiodnr.gov/environmental-geology/solid-waste-disposal> describes the conditions in which DNR will support the placement of a landfill in the state of Ohio.

Geologic and Hydrologic Considerations in Solid-Waste Management
“Waste disposal on regulatory floodplains and areas within 200 feet of streams, lakes, or wetlands is prohibited....In the site-selection process of locating a landfill, regulatory criteria such as those previously described are useful in the preliminary screening or reconnaissance phase of site selection. All areas which cannot meet these criteria are eliminated automatically from further consideration. Areas not excluded during this process become candidates for detailed geologic and hydrologic assessment.”

The Village of Piketon notes that OH EPA has already granted a waiver to DOE for encroachment of a stream within 200 feet at the OSWDF, and the DOE has apparently given itself an “allowance” for meeting the TSCA landfill siting requirement of maintaining a 50 foot separation from the bottom of the liner to the historical high groundwater mark. The Village's consultant has documented that essentially the entire footprint of the OSWDF fails to meet the TSCA 50 foot separation requirement with the most shallow groundwater elevation recorded by DOE at 9 feet below ground surface. Based on the DNR perspective presented on their web site with respect to landfill siting, the OSWDF should have been eliminated from consideration.

Summary

The comments offered by the US EPA in their December 19, 2017 Report to the Ohio EPA on the OSWDF reinforce the Village of Piketon's concerns with having a low-level nuclear and hazardous waste landfill constructed at Area D. I urge both the DOE and Ohio EPA to take a step back and give careful consideration to the consequences if your analysis - your perspective - turns out to be wrong and this landfill starts leaking nuclear waste into the surface water. **This has already happened at Oak Ridge** and I'm certain DOE thought they got it right when they built that landfill too. Let's error on the side of caution and complete the necessary studies, or do as DOE decided to do at Oak Ridge which was to choose to find/ investigate an alternative site.

I want to work this out with all parties and hope we can come to agreement on a path forward. Let's not dig in our collective heels on hardened positions. The people of Southern Ohio deserve our collective best efforts. I await your response to my concerns and my offer to work with you to develop a consensus approach.

Sincerely

Billy Spencer
Mayor

Attachment

Pc: The Honorable Robert Portman, US Senator
The Honorable Sherrod Brown, US Senator
The Honorable John Kasich, Governor of Ohio
The Honorable Brad Wenstrup, Congressman - District 2